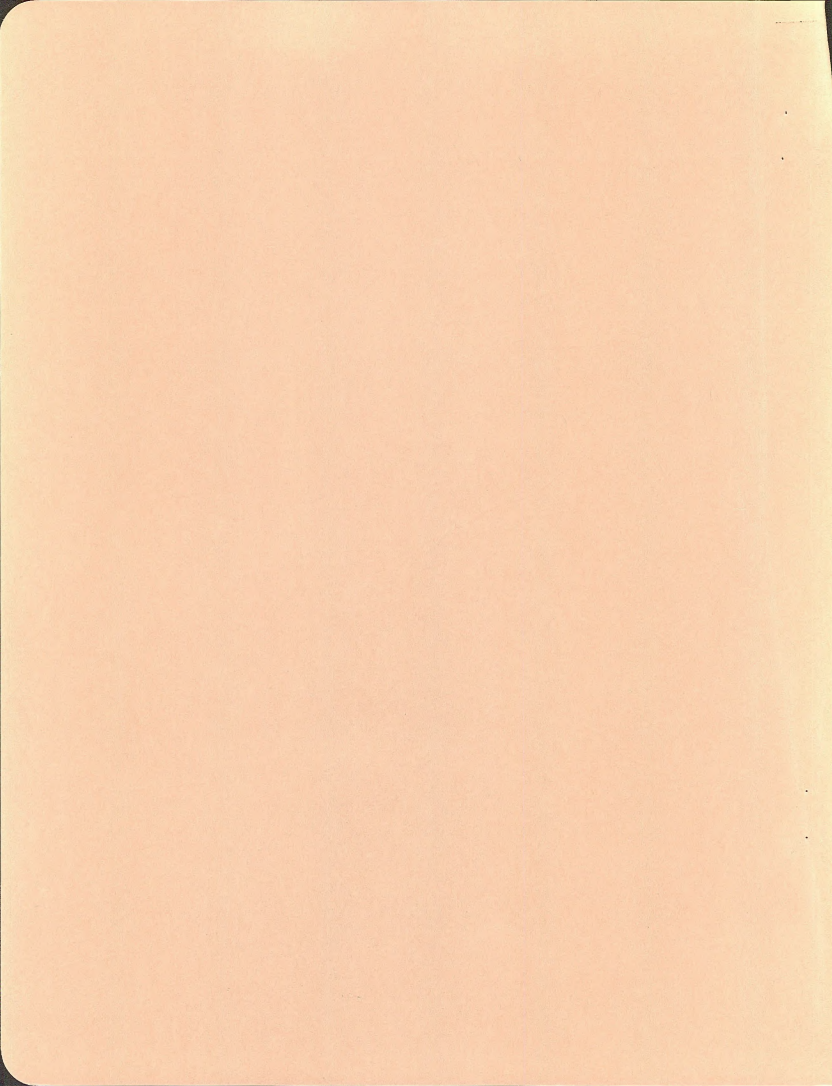


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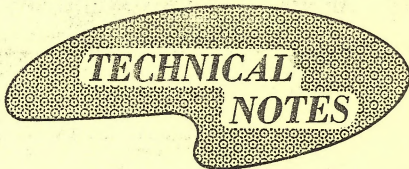
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July 6, 1966

GRASS TETANY

During the recent Range and Wildlife Management Training Conferences held in Socorro, New Mexico; Winnemucca, Nevada; and Rawlins, Wyoming, the presentation on Grazing Management on Crested Wheatgrass stimulated a lot of discussion on grass tetany. Information Memo No. 64-10, dated January 14, 1964 concerning grass tetany was issued some time ago and is hereby reproduced for your information.

The following information about grass tetany has been compiled from the most recent literature and from interviews with animal nutritionists, specialists in livestock diseases, and biochemists at the Animal Industry Station, Beltsville, Maryland.

What is tetany?

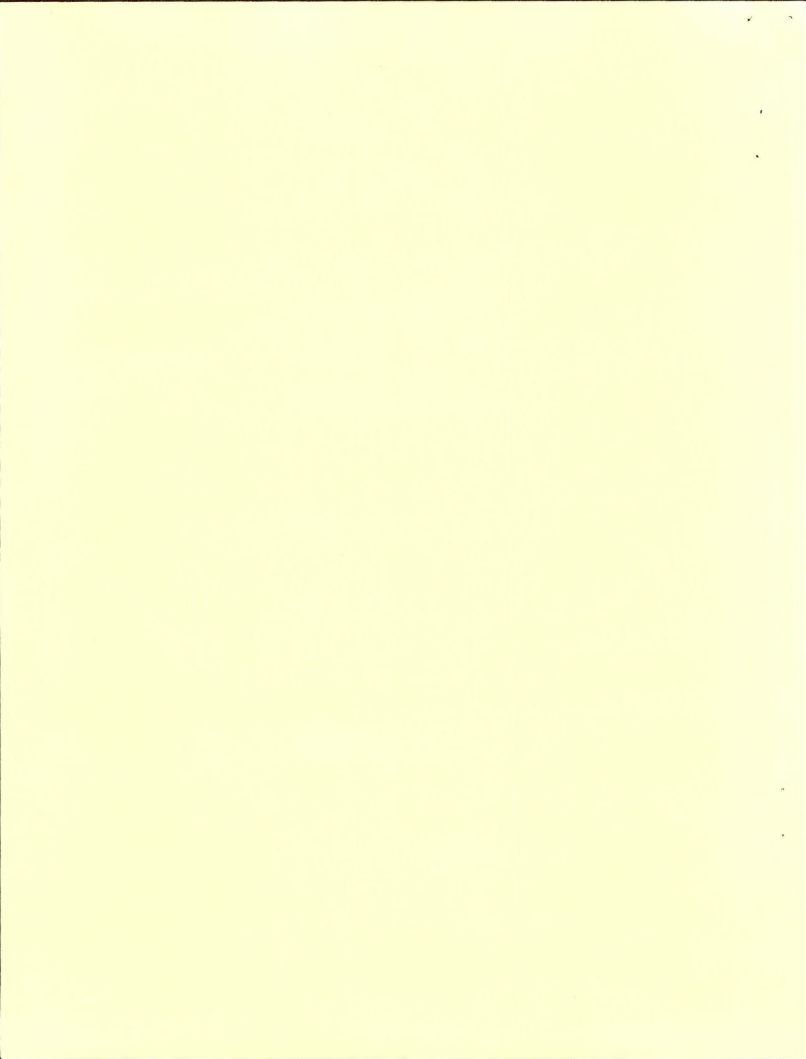
Tetany, irrespective of the cause or name, is a hyperirritability of the neuromuscular system which in severe cases results in convulsions. Tetany is not to be confused with tetanus which is caused by toxins produced by infectious bacteria which gain entrance through a wound. The toxin produced acts on the central nervous system resulting in muscle spasms and rigidity.

Grass tetany is one of many names given when animals develop typical tetany symptoms while grazing grass pastures and ranges.

What are symptoms of grass tetany?

Symptoms of grass tetany, in the order of appearance, are excitement, incoordination, loss of appetite, viciousness, staggering, falling, muscular twitching especially in the extremities, teeth grinding, salivation, tetanic contractions of muscles, prostration, labored breathing, pounding of the heart, coma, convulsions, and death.

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What is the extent of the grass tetany disease?

Grass tetany is a serious problem in Holland where it is estimated that 1 out of every 100 cows is affected by grass tetany and 1 out of every 7 affected cows succumbs. The disease has been reported also from England, New Zealand, and Australia. It is common in the winter wheat grazing area of Texas and Oklahoma.

In addition to its occurrence on native pastures of Holland and New Zealand, grass tetany is known to occur in animals grazing Bermuda grass, oats, rye, barley, wheat, bluegrass, Austrian winter peas, native rangeland in the western United States and crested wheatgrass.

The various names given the disease are grass tetany, lactation tetany, wheat pasture poisoning, Hereford disease, tetany of parturition, grass staggers, oat pasture poisoning, tetany paresis, magnesium tetany, and hypomagnesemia.

What animals are susceptible and when?

The disease has been reported in cattle primarily (both beef and dairy) but also occurs in sheep, goats, and horses. The disease occurs almost exclusively in cows grazing lush green growth in the spring and immediate before, during, or shortly after calving. Bulls and steers are almost never affected even when grazing the same forage as diseased cows.

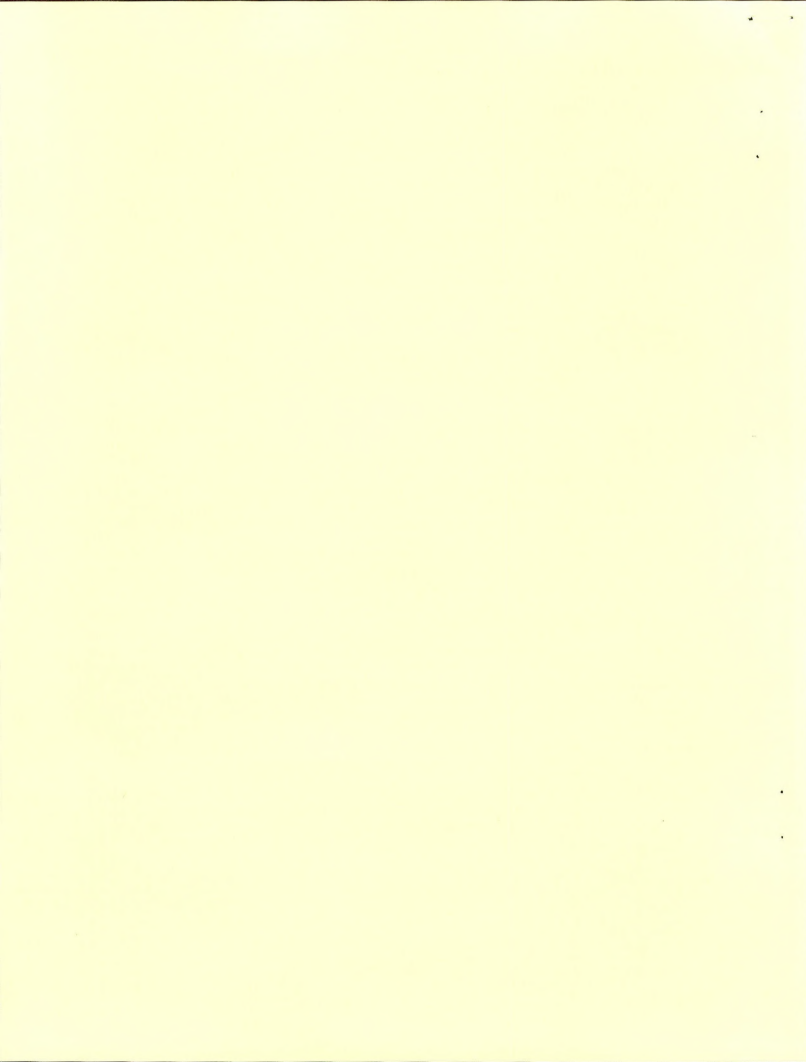
Symptoms of grass tetany disease frequently appear following a storm. Precipitation followed by warm spring temperatures provide the lush rapid growth of forage which "triggers" the tetanic symptoms.

What causes grass tetany?

Causes of the disease are unknown. Associated with the disease is a lowered magnesium and calcium content of the blood serum. This is a consequence of the disease and not necessarily the cause. The forage of grazing animals showing symptoms of grass tetany has been suspected of being deficient in magnesium. This is seldom ever true. Many investigators report development of symptoms in animals on rations containing adequate magnesium. Native and introduced pasture grasses and good quality hay are seldom ever deficient in magnesium.

The most widely accepted theory among animal scientists is that grass tetany is a result of metabolic disturbances associated with endocrine gland malfunction during the time of, and after, calving when heavy demands for mineral elements and body changes are occurring.

Other theories attempting to explain the causes of grass tetany are advocated in the literature.



What can be done to prevent or remedy the disease?

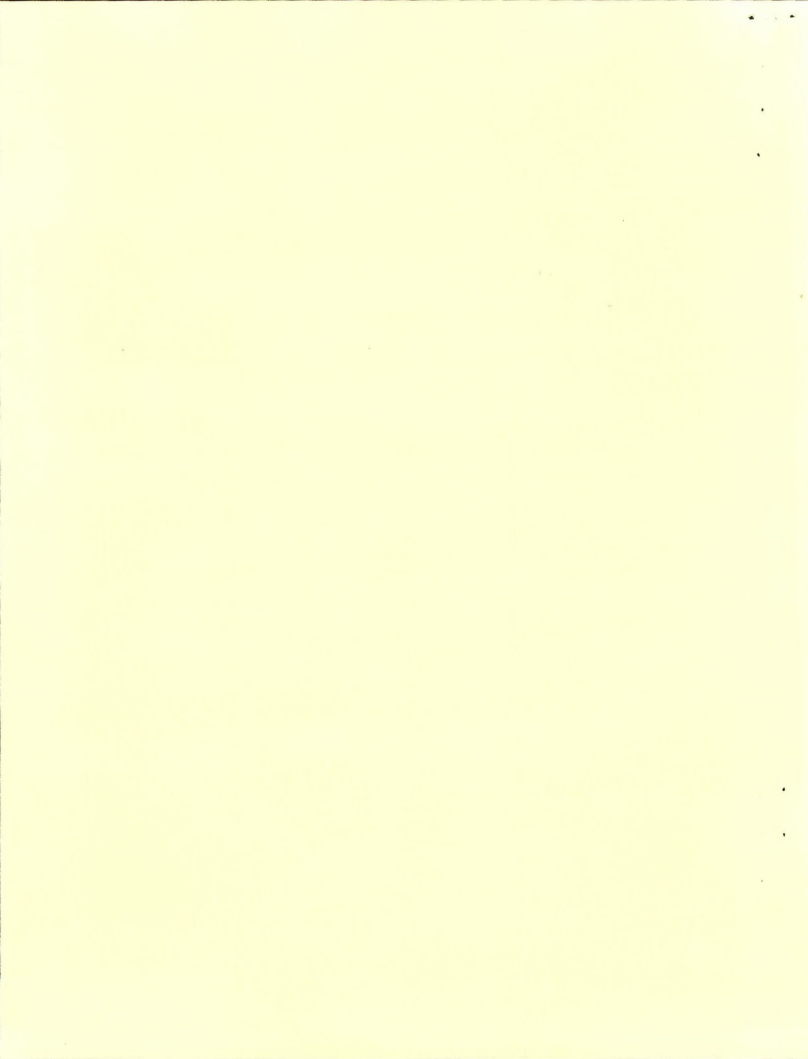
Many authorities recommend feeding a magnesium supplement to livestock on early spring pastures (0.1 to 0.25 pounds daily). Other authorities state that magnesium supplementation will not prevent grass tetany. Farmers and ranchers which are plagued with the disease on winter wheat provide their cows with hay or feed bundles during the first two weeks while grazing the wheat and have greatly reduced the incidence of disease. Others recommend removing the animals from pasturage and feeding hay at night for the first few days after turning on the pasture.

The most commonly used treatment for an animal showing symptoms of grass tetany is intravenous or intraperitoneal injections of a solution of calcium gluconate. Some authors state that recovery is quicker if the solution is fortified with magnesium or phosphorus.

What recommendations for prevention and cure can be made?

Based on published evidence and oral communication with the Beltsville scientists, the following recommendations appear justified:

- (1) Animals should be maintained on a high plane of nutrition and in good condition before turning on to lush green grass.
- (2) If danger from grass tetany is suspected, extreme caution should be exercised in early grazing of pregnant or recently freshened cows. Cows may graze later in the spring without apparent danger. Steers or bulls apparently may graze early growth with impunity.
- (3) Provide good quality hay or roughage if the pasture is grazed by cows, at least for the first two weeks on green grass. Good stubble of the previous year's growth may suffice to fill this need for dry roughage. However, if the area was burned or heavily grazed and all old growth removed in the fall, the new young growth in the spring may cause trouble.
- (4) Magnesium supplementation may be recommended with the realization that it possibly may not prevent the disease. This should start 3 to 4 weeks before turning on to spring growth.
- (5) Lactating cows on lush spring growth should be watched carefully the first few weeks for symptoms of grass tetany. If symptoms are noted the animals should be fed good quality hay or injected immediately with prepared solutions of calcium gluconate. The rancher can and should be prepared to do this once the veterinarian demonstrates the procedure. The chance of recovery is slight if treatment is delayed 8 to 12 hours or after the animal is in a coma.



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